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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/758,281	01/16/2004	Karl-Ernst Noreikat	095309.53123US	5142

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EXAMINER	
ONEILL, KARIE AMBER	
ART UNIT	**PAPER NUMBER**
1745	

DATE MAILED: 11/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/758,281	NOREIKAT.ET AL.	
	Examiner	Art Unit	
	Karie O'Neill	1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *August 25, 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *7-31-2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. The Applicant's amendment filed on August 25, 2006, was received. Claims 1-9 are pending in this office action. Claim 1 was amended. Claim 10 was cancelled.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear what is considered "sufficient" in terms of the temperature difference in order to allow for removal of the waste heat generated on the fuel cell.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-7 and 9-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Formanski et al. (US 6,939,631 B2).

With respect to Claim 1, Formanski et al. disclose a method of operating a fuel cell system having at least one fuel cell whose operating temperature is regulated by a cooling circuit that includes a cooling heat exchanger or a cooling loop (column 1lines 43-46), said method comprising: using the cooling loop to control the operating temperature (column 1 lines 43-46); detecting the operating temperature via temperature sensors (column 3 lines 12-19); detecting an ambient temperature (column 4 lines 45-46); determining a temperature difference between said detected operating temperature and said detected ambient temperature of the cooling loop, such that waste heat of the at least one fuel cell is removed at a lowest temperature at which such a removal is possible. This can be seen in the equation of column 10 lines 14-23 where ITD is the inlet temperature difference of the cooling medium and the ambient temperature. Formanski et al. disclose controlling said cooling circuit such that, for a current load on the at least one fuel cell, the temperature difference is reduced to the extent just sufficient to allow removal of the waste heat generated on the fuel cell at the current load. This is seen in column 10 lines 47-57 where the cooling system reduces the temperature of the system to the lowest possible temperature closest to the ambient temperature so as to keep the system able to dissipate heat of 60 kW to the environment and working at its lowest temperature conditions.

With regard to Claim 2, Formanski et al. disclose the fuel cell comprising a PEM fuel cell (column 1 lines 9-12) and the fuel cell being operated at three different operating temperatures of 60, 70 and 80°C (column 8 lines 63-64).

With respect to Claims 3-5, 7 and 9, in Figure 1, Formanski et al. disclose, the cooling loop (17) including a radiator (21) and pump (19) arranged in a motor vehicle so that air flows through in order to cool down the liquid coolant of the cooling loop. The flow through the radiator is assisted by an air-circulating fan (27), which can be driven by an electric motor, the cooling power being influenced by the control system (29). See column 3 lines 3-11.

With respect to Claim 6, Formanski et al. disclose in column 10, the method according to Claim 1, wherein the operating temperature of the at least one fuel cell is defined such that a temperature difference between a cooling medium flowing in the cooling loop and said ambient temperature in maintained at a minimum value that is sufficient to ensure removal of the waste heat generated. The parameter Q/ITD describes the capacity of the cooling system, which includes the temperature of the cooling medium and the ambient temperature, and from the relationship between them it can be seen that the dependency of the cooling system on the ambient temperature allows for removal of waste heat at the lowest operating temperature possible, 60°C.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Formanski et al. (US 6,939,631 B2), as applied to Claims 1-7 and 9 above, and in further view of Erdle et al. (US 6,833,206 B2).

Formanski et al. disclose the method in paragraph 5, but does not disclose wherein the fuel cell system is operated as an auxiliary power unit (APU).

Erdle et al. disclose, in Figure 1, a vehicle with a fuel cell system, and according to the invention the vehicle is also equipped with an APU which comprises a fuel cell (column 2 lines 40-43). Therefore, at the time of the invention it would have been obvious to one of ordinary skill in the art to operate the fuel cell system of Formanski et al. as an APU, because Erdle et al. disclose delivering electric power when the combustion engine is not running because the fuel cell is capable of delivering enough electric power as needed by the APU (column 2 lines 62-64).

Response to Arguments

8. Applicant's arguments filed August 25, 2006, have been fully considered but they are not persuasive.

Applicant's principal arguments are:

(a) prolonged service life of the instant application that is not mentioned as an objective of the Formanski et al. patent and using ambient temperature to maintain a minimum difference between the ambient temperature and the fuel cell operating temperature at a particular load.

Examiner asserts:

(a) Applicant argues points which are not present in the independent claim. Limitations appearing in the specification but not recited in the claim are not read into the claim. In re Zletz, 893 F.2d 319, 321-22, 13 USPQ2d 1320, 1322 (Fed. Cir.1989).

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karie O'Neill whose telephone number is (571) 272-8614. The examiner can normally be reached on Monday through Friday from 8am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Karie O'Neill
Examiner
Art Unit 1745

KAO

DAH-WEI YUAN
PRIMARY EXAMINER